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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,805	08/23/2001	Ying Ma	520	9597
25559	7590	02/17/2004	EXAMINER	
ATMI, INC. 7 COMMERCE DRIVE DANBURY, CT 06810			GOUDREAU, GEORGE A	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/935,805

Applicant(s)

MA ET AL.

Examiner

George A. Goudreau

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9-30-03 to 11-17-03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 9-75 is/are pending in the application.
- 4a) Of the above claim(s) 39-75 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29-38 and 76-79 is/are allowed.
- 6) ☒ Claim(s) 1,3 and 9-19 is/are rejected.
- 7) ☒ Claim(s) 2 and 20-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

George A. Goudreau

GEORGE GOUDREAU
PRIMARY EXAMINER

2-041

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

2. Claims 1, 3, 9, and 10-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et. al. (2002/0173221).

Li et. al. disclose a process for removing a residual Cu layer on an ILD layer using an abrasive free cmp slurry in combination with a fixed abrasive pad. The cmp slurry has approximately a neutral PH. (A PH of approximately 6.9 is claimed.). The abrasive free cmp slurry is comprised of the following components:

- H₂O;
- ammonium hydrogen phosphate (i.e.-a PH adjuster);
- H₂O₂ (i.e.-an oxidizer);
- BTA (i.e.-a corrosion inhibitor); and
- IDA (i.e.-a corrosion inhibitor).

This is discussed specifically on pages 5-8; and discussed in general on pages 1-9. This is shown in figures 1-6.

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As to applicant's recitation that they employ their claimed cmp slurry composition in the conduction of specific cmp processes, the examiner cites the case law listed below of interest to the applicant in this regard.

Furthermore, it is obvious to one skilled in the art that the configuration of the substrate worked upon by the apparatus claimed in this invention is not patentable in view of *In re Young* (25 U.S.P.Q. 69, 71 (CCPA 1935)) and *In re Rishoi* (94 U.S.P.Q. 71,73 (CCPA 1952)). The Court of Customs and Patent Appeals stated in *In re Young* that inclusion of material worked upon by a machine as element in claim may not lend patentability since claim is not otherwise allowable. Similarly, the Court of Customs and Patent Appeals stated in *In re Rishoi* that there is no patentable combination between a device and the material upon which it works.

Thus, it is irrelevant that *Li et. al.* does not specifically disclose the usage of their cmp slurry in the specific cmp processes which are recited by applicant in their cmp slurry composition claims since the cmp slurry taught by *Li et. al.* is inherently capable of conducting the specific cmp processes which are recited by the applicant.

3. Claims 2, and 20-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 29-38, and 76-79 are allowed.

5. Applicant's arguments filed have been fully considered but they are not persuasive.

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Applicant argues the following points regarding the examiner's rejection of their claimed subject matter.

-Applicant states that the Li et. al. reference does not disclose the specific usage of a cmp slurry which is free of abrasive particles and contains IDA, and an oxidizer.

The examiner must disagree.

-Li et. al. does disclose a cmp slurry with the specific properties listed above which is used to remove the residual Cu layer left over from a first cmp step used to remove the bulk of the Cu layer on the ILD layer on the wafer.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner George A. Goudreau whose telephone number is (571)-272-1434. The examiner can normally be reached on Monday through Friday from 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Examiner Gregory Mills, can be reached on (571)-272-1439. The appropriate fax phone number for the organization where this application or proceeding is assigned is (703)-872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) -308-0661.


George A. Goudreau/gag

Primary Examiner

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